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Comment

## ***Interactive comment on “Biogeochemical factors affecting mercury methylation rate in two contaminated floodplain soils” by T. Frohne et al.***

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### General Comments

The manuscript entitled: Biogeochemical factors affecting mercury methylation rate in two contaminated floodplain soils, authored by T. Frohne et al. is a very well written and experimentally justified work, recommended by this reviewer for publication in Biogeosciences. It contains very interesting data and interpretations about the mercury methylation process in alluvial plains, sites where this activity seems to be especially active. It is also very well documented with an important number of references relevant to the study subject. I only have some suggestions that I hope may help to improve the manuscript.

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## Specific comments

The major comment to include here is about the scarcity of analytical quality control information. I suggest the authors to include in 2.2 and 2.3.3 Sections brief descriptions of this issue, including blanks and certified materials handled, as well as some data about detection limits and analytical ranges for the different determinations. Other question refers to the particular characteristics of the soils samples: both are extremely low in clay. This is not so common worldwide, and I feel this should be emphasized or at least recognized. I mean, inversely to sand and silt, clay may be considered as an active physic-chemical component of soils, and to generalize the conclusions of the study it should be necessary to perform these experiments with clay-rich soils. It should be noted as a recommendation for future work in this field.

## Technical corrections

As a general comment for this section, I notice a certain “abuse” of the expression: “On the one hand. . . on the other hand. . .”. I suggest changing this expression at least in one or two cases. For instance, in page 13, lines 15 to 21, the “hands” are quite far, and it generates some uncertainty when reading.

Page 3, lines 14-14: “Both methyl mercury species [Me<sub>2</sub>Hg] and [MeHg<sup>+</sup>] exhibit a significant risk to. . .” Previously to this sentence the authors have referred only to “one” species, so “both” seems to be improper here.

Page 16, line 26: “. . . identified to be the principle methylators of inorganic. . .”: “principle” should be “principal”?

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**BGD**

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